

CLAIMS

What is claimed is:

- Sub A1
- 1 1. A method of streaming a page of data, the method comprising:
 - 2 allocating at least one object corresponding to the page of data; and
 - 3 executing the at least one object, wherein executing comprises,
 - 4 executing a proxy if the at least one object is a proxy,
 - 5 executing a component if the at least one object is a component, and
 - 6 executing a container if the at least one object is a container.
 - 1 2. The method of claim 1 further comprising recursively performing allocating and executing the at least one object to process at least one sub-object contained within the at least one object.
 - 1 3. The method of claim 1 further comprising:
 - 2 allocating an occurrence of an associated base agent corresponding to the page of data.
 - 1 4. The method of claim 3 wherein executing a component further comprises:
 - 2 calculating output data for the occurrence of the component; and
 - 3 streaming out the data to the associated base agent.
 - 1 5. The method of claim 4 wherein streaming further comprises calling a stream result method of the associated base agent.

1 6. The method of claim 4 further comprising creating a reference to the associated
2 base agent within the component.

1 7. The method of claim 2 wherein executing the container further comprising:
2 generating at least one container object from the container; and
3 executing the at least one container object, wherein executing comprises,
4 executing a proxy if the at least one container object is a proxy,
5 executing a component if the at least one container object is a component,
6 and
7 executing a container if the at least one container object is a container.

1 8. The method of claim 7 further comprising recursively performing generating and
2 executing the at least one container object to process at least one container sub-object
3 contained within the at least one container object.

1 9. The method of claim 2 wherein executing a proxy further comprises:
2 determining if a cache entry exists for the occurrence of the at least one object;
3 if a cache entry is not found,
4 allocating a new cache entry; and
5 streaming out a cache entry value.

1 10. The method of claim 9 wherein determining further comprises:
2 matching cache criteria for the cache entry;
3 if the cache criteria does not match,
4 allocating an underlying object associated with the proxy, and
5 executing the underlying object; and
6 if the cache criteria matches,
7 constructing a cache key.

1 11. The method of claim 10, wherein constructing a cache key further comprises:
2 matching at least one input parameter against at least one cache criteria entry.

1 12. The method of claim 9 wherein determining further comprises:
2 examining the cache using a cache key.

1 13. The method of claim 9 wherein allocating a new cache entry further comprises:
2 creating a new cache entry;
3 allocating an occurrence of a caching base agent; and
4 executing the caching base agent.

1 14. The method of claim 13 wherein creating the new cache entry further comprises:
2 creating a new key; and
3 reserving the new cache entry corresponding to the new key.

- 1 15. The method of claim 13 wherein executing the caching base agent further
2 comprises:
3 creating a buffer entry to capture output data;
4 allocating an underlying object associated with the proxy;
5 executing the underlying object to stream out the output data to the buffer entry,
6 wherein executing comprises,
7 executing a proxy if the at least one object is a proxy,
8 executing a component if the at least one object is a component, and
9 executing a container if the at least one object is a container; and
10 transferring the buffer entry to the new cache entry.
- 1 16. The method of claim 9 wherein determining further comprises:
2 determining if the cache entry is empty; and
3 streaming out an error message if the cache entry is empty.
- 1 17. The method of claim 1 wherein the at least one object comprises all components
2 within the page of data.
- 1 18. The method of claim 1 wherein the at least one object is an executable object.
- 1 19. The method of claim 1 wherein the at least one object is a component, a proxy, or a
2 container.

- 1 20. A method of streaming a page of data, the method comprising:
- 2 (a) allocating an occurrence of at least one base agent associated with the page of
- 3 data;
- 4 (b) allocating an occurrence of a container associated with the at least one base
- 5 agent;
- 6 (c) generating at least one object from the occurrence of the container;
- 7 (d) executing the at least one object; and
- 8 (e) streaming output data of the at least one object to the base agent.

- 1 21. The method of claim 20 further comprising recursively performing (a) through (e)
- 2 to process at least one sub-object contained within the at least one object.
- 1 22. The method of claim 21 wherein the at least one object is a component, a proxy, or a
- 2 container.
- 1 23. The method of claim 21 wherein the sub-object is a component, a proxy, or a
- 2 container.

- 1 24. A system for streaming a page of data, the system comprising:
- 2 means for allocating at least one object corresponding to the page of data; and
- 3 means for executing the at least one object, wherein means for executing
- 4 comprises,
- 5 means for executing a proxy if the at least one object is a proxy,
- 6 means for executing a component if the at least one object is a component,
- 7 and
- 8 means for executing a container if the at least one object is a container.
- 1 25. A system for streaming a page of data, the system comprising:
- 2 means for allocating an occurrence of at least one base agent associated with the
- 3 page of data;
- 4 means for allocating an occurrence of a container associated with the at least one
- 5 base agent;
- 6 means for generating at least one object from the occurrence of the container;
- 7 means for executing the at least one object; and
- 8 means for streaming output data of the at least one object to the base agent.

1 26. An article of manufacture including one or more computer-readable media with
2 executable instructions therein, which, when executed by a processing device causes
3 the processing device to:

4 allocate at least one object corresponding to the page of data; and
5 execute the at least one object, wherein to execute comprises,
6 execute a proxy if the at least one object is a proxy,
7 execute a component if the at least one object is a component, and
8 execute a container if the at least one object is a container.

1 27. An article of manufacture including one or more computer-readable media with
2 executable instructions therein, which, when executed by a processing device causes
3 the processing device to:

4 allocate an occurrence of at least one base agent associated with the page of data;
5 allocate an occurrence of a container associated with the at least one base agent;
6 generate at least one object from the occurrence of the container;
7 execute the at least one object; and
8 stream output data of the at least one object to the base agent.

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- 1 28. A system for streaming a page of data, the system comprising:
- 2 a base agent processing unit to allocate at least one object corresponding to the
- 3 page of data;
- 4 an object processing unit to execute the at least one object if the at least one object
- 5 is a component or a container; and
- 6 a proxy processing unit to execute the at least one object if the at least one object
- 7 is a proxy.
- 1 29. The system of claim 28 wherein the base agent processing unit allocates an
- 2 occurrence of an associated base agent corresponding to the page of data.
- 1 30. The system of claim 29 wherein the object processing unit further calculates output
- 2 data for the component, and streams out the data to the associated base agent.
- 1 31. The system of claim 30 wherein the object processing unit further calls a stream
- 2 result method of the associated base agent.
- 1 32. The system of claim 30 wherein the object processing unit creates a reference to the
- 2 associated base agent within the component.
- 1 33. The system of claim 29 wherein the object processing unit generates at least one
- 2 container object from the container, and executes the at least one container object,
- 3 wherein executing comprises.

- 1 34. The system of claim 33 wherein the object processing unit executes a proxy if the at
2 least one container object is a proxy, executes a component if the at least one
3 container object is a component, and executes a container if the at least one container
4 object is a container.
- 1 35. The system of claim 28 wherein the base agent processing unit further allocates an
2 occurrence of at least one associated base agent corresponding to the page of data.
- 1 36. The system of claim 35 wherein the proxy processing unit further determines if a
2 cache entry exists for the occurrence of the at least one object, allocates a new cache
3 entry if a cache entry is not present, and streams out a cache entry value.
- 1 37. The system of claim 36 wherein the proxy processing unit matches cache criteria for
2 the cache entry, allocates an underlying object associated with the proxy and
3 executes the underlying object if the cache criteria does not match, and constructs a
4 cache key if the cache criteria does match.
- 1 38. The system of claim 37 wherein the proxy processing unit further matches at least
2 one input parameter against at least one cache criteria entry.
- 1 39. The system of claim 36 wherein the proxy processing unit further examines the
2 cache using a cache key.

- 1 40. The system of claim 36 wherein the proxy processing unit further creates the new
2 cache entry in the cache, allocates an occurrence of a caching base agent, and
3 executes the caching base agent.
- 1 41. The system of claim 40 further comprising a caching agent processing unit to create
2 a buffer entry to capture output data, allocate an underlying object associated with
3 the proxy, execute the underlying object, and transfer the buffer entry to the new
4 cache entry.
- 1 42. The system of claim 41 wherein the caching agent processing unit executes a proxy
2 if the at least one object is a proxy, executes a component if the at least one object is a
3 component, and executes a container if the at least one object is a container.
- 1 43. The system of claim 36 wherein the proxy processing unit determines if the cache
2 entry is empty, and streams out an error message if the cache entry is empty.
- 1 44. The system of claim 28 wherein the at least one object comprises all components
2 within the page of data.
- 1 45. The system of claim 28 wherein the at least one object is an executable object.
- 1 46. The system of claim 28 wherein the at least one object is a component, a proxy, or a
2 container.

1 47. A system for streaming a page of data, the system comprising:

2 a base agent processing unit to allocate an occurrence of at least one associated

3 base agent corresponding to the page of data, to allocate an occurrence of a

4 container associated with the associated base agent, and to generate at least

5 one object from the occurrence of the container; and

6 an object processing unit to calculate output data for the at least one object and to

7 stream out the output data.